

- b*⁷. Lower ends of body-stripes on belly not meeting ventral stripe; principal stripes on quarters broad; legs not or hardly striped below knees and hocks *antiquorum*, H. Smith. (Damaraland.)
- b*⁴ Quarters with only a few abbreviated stripes below the long stripe that runs to the root of the tail; body-stripes stopping short above the belly as in *E. zebra*, *E. quagga*, and *E. Grevyi*; legs without stripes, except sometimes on the knees and hocks; tail usually without lateral spots or stripes *Burchelli*, Gray (*sensu stricto*). (British Bechuanaland.)
- b*³. Ground-colour yellowish red or chestnut, with the exception of the belly and legs, which are pale and without stripes as in *E. Burchelli*; body-stripes showing a strong tendency to die away on the posterior part of the flanks, when reaching the quarters broken up into spots *quagga*, Gmelin. (Cape Colony, south of Orange River.)

VI.—*Aquatic Rhynchota: Descriptions and Notes*.—No. I.
By GEORGE W. KIRKALDY.

Fam. *Corixidæ*.

DIAPREPOCORIS, gen. nov.

Corixinarum genus, scutello magno parapleurisque minutis instructis; ovalis, depressus; capite magno, basi supra thoracem producto. Pronoto transversissimo, non rastrato. Scutello hemielytrisque non rastratis. Rostro unisegmentato. Palis bisegmentatis. Pedibus intermediis posticisque *Corixæ*, Geoff., similibus.

Oval, depressed, dull; *head* large (very convex at the vertex), overlapping the very transverse non-rastrate pronotum. *Scutellum* very large, not rastrate; *parapleura* minute. *Hemielytra* not rastrate.

Rostrum unisegmentate. *Palæ* bisegmentate.

Intermediate and posterior *pedes* as in *Corixa*, Geoff.

This utterly distinct genus is readily distinguished by the very transverse pronotum and by the large scutellum; the parapleura and the unisegmentate rostrum will further sepa-

rate it from *Sigara*, Fabr., and the comparatively short posterior pedes from the long-legged *Nychia*, Stål. It appears to be most closely related to *Corixa*, and perhaps is intermediate between that genus and *Nychia*.

1. *Diaprepocoris barycephala*, sp. n.

Caput subquadratum, basi concava, cum oculis hemisphæroideum, oculorum marginibus lateralibus interioribus fere parallelis, fere perpendicularibus capitis ad basin, verticem versus leviter divergentibus, basi quam oculorum utrorumvis basi latiore (a super. vis.). Pronotum circiter quadruplum latius quam longius, rugulosum. Scutellum isoscele, non acuminatum. Hemielytra pubescente curtissima instructa, membranæ lobis subæqualibus. Tarsi intermedii unguiculis longiores, tarsi tibiæque subæquales. Femora anteriora apicem versus calcare subtruncato instructa.

♂ mihi ignotus.

♀. Palarum segmentum 1^{um} (a latere vis.) angustum, sublunatum; subtus concavum; segmentum 2^{um} angustissimum, convexiusculum, subcylindricum. Capitis frons longitudinaliter mediatim subcarinata.

Head flavous, wider basally (seen from above) than either of the eyes, dorsal surface roughly square, interior lateral margins of the eyes nearly parallel and almost perpendicular to the base of the head, slightly diverging from the base; base of head concave, slightly sinuate. Head with eyes (seen from above) hemisphæroidal; eyes fuscous. *Pronotum* about four times as wide as long, very finely rugose, brownish black anteriorly (pale where covered by the head), flavescens posteriorly, lateral margins widely luteous.

Scutellum flavescens, infuscated, isosceles triangular, very large, lateral margins narrowly black.

Hemielytra sordid yellowish (slightly infuscated near the base of the clavus, on the basal half of the corium, and more or less of the apical half of the membrane), without guttulate or vermiculate markings; scutellum and hemielytra furnished with short black pubescence. Lobes of membrane subequal. Anterior half of *embolium* luteous.

Metanotum black; dorsal surface of *abdomen* dark fuscous (varying); connexivum dark fuscous anteriorly, paler posteriorly. *Pedes*, including *unguiculi*, luteo-testaceous; *anterior femora* armed with a blunt spur near the apex; intermediate tibiæ and tarsi subequal, unguiculi shorter; intermediate femora with short golden hairs; posterior tibiæ and tarsi armed with short concolorous spines.

Whole *ventral* surface flavescens testaceous, with very fine short pale yellow pubescence.

The female apparently has no facial impression.

Head very convex, frons with a longitudinal median carina.

Palæ: first segment sublunate; second segment short, very narrow, slightly convex, subcylindrical.

N.B.—This second segment appears to be a genuine second tarsal segment, not a single claw. The "Klaue" of the palæ of various *Corixæ* mentioned and figured by Fieber (Bull. Soc. Impér. Moscou, xxi. (1^e partie) tab. x. fig. 9 &c., 1848) seems to me to be only a rather stiff palal bristle.

Long. 6·2–7·3 millim.; lat. pronot. 2·4–3 millim.; lat. max. hemiel. 3·5 millim.

Launceston (Tasmania) and Melbourne (Victoria): British Museum.

CORIXA, Geoff.

2. *Corixa eurynome*, sp. n.

Corixæ atomariæ, Illiger, remote affinis; capite fere rectangulari, oculorum marginibus lateralibus interioribus fere perpendicularibus capitis ad basin; pronoto hemielytrisque non rastratis, punctatissimis; pronoto subæcutangulato; tibiis unguiculisque intermediis subæqualibus, tarsis longioribus.

♂. Faciei impressione fere ad verticem attingente; palis anguste cultratis. Strigili minutissima, subquadrata, dentium scriebus latis quattuor instructis.

♀. Faciei impressione labioque ovoidem formantibus; palis anguste cultratis.

Very different from any other described *Corixa*, in appearance not unlike *C. atomaria*, Illiger, superficially.

Shining; *head* almost rectangular, pale testaceous, interior lateral margins of the eyes almost perpendicular to the base of the head.

Pronotal angles rounded, subacute.

Pronotum and *hemielytra* sordid testaceous, more or less infuscated, densely furnished with black punctuations, not rastrate; no pronotal or hemielytral guttulate or vermiculate lineations, although the regular and dense punctuation gives the appearance of narrow black lines; hemielytra paler at the base (owing to absence of punctuation), covered with short pale hairs.

Meso- and *metanotum* black; *mesosternum* medianly black.

Ventral aspect of abdomen and *pedes* (including *coxæ*) flavo-testaceous; intermediate tibiæ rather longer than unguiculi, which are much longer than the tarsi.

♂. *Facial impression* reaching almost to the vertex; dorsal aspect of head rather longer than in female, not longi-

tudinally medianly carinate; palæ rather stouter than in female. *Eyes* sordid pinkish.

Strigil exceedingly minute, bluish black, subquadrate, with four broad rows of "teeth."

♀. Head very convex, *facial impression* and labium forming an ovoid, the base of which is continued slightly beyond the apical margins of the eyes; the impression is covered with short, dense, pale golden hairs.

Head medianly longitudinally carinate. *Eyes* greenish.

Long. 8.5–9 millim.

Adelaide River, South Australia: British Museum.

I am indebted to Mr. W. F. Kirby, F.L.S., for permission to describe the two preceding species.

3. *Corixa australis*, Fieber.

Corixa australis, Fieber, Abh. k. böhm. Ges. Wiss. (5) vii. p. 232, pl. i. fig. 15 (1851).

Head punctate. Width of base less than that of either eye (as seen from above).

Pronotum obtuse-angled, very rastrate.

Pedes: intermediate tibiæ rather longer than the unguiculi, which are much longer than the tarsi.

♂. *Strigil* comparatively large, suboval, truncated at both ends, bluish black, furnished with five or six rows of "teeth," the fourth or fifth being broken up into two or three dextrorlaterally.

Facial impression obovate, very large and deep, extending almost to the vertex; base of the interior impression curved, its lowest point in a line with the apical margins of the eyes.

The female has not yet been described.

I have not seen the type of this species, but two males from Tasmania in the British Museum accord with Fieber's description and his figure of the male palæ.

I am acquainted with only three Australian *Corixæ*, all very different:—*C. australis*, Fieber, apparently belonging to the "*limitata*, Fieber," group; *C. eurynome*, described above; and a species allied to *striata*, Linn., of which I have seen a single specimen. Two species are also recorded from New Zealand:—*C. arguta*, Buch. White (Ent. Month. Mag. xv. p. 161, 1878), and *C. zealandica* (figure, but no description), Hudson (Element. Man. Insects N. Z., 1892).

There are doubtless very many species yet to be recorded from those countries.

Notes.

Corixa subjacens, Walker, in Tennant's Ceylon, i. (2nd ed.)

1859, p. 293, and Motschulsky, Bull. Soc. Moscou, xxxvi. (pt. 2) p. 94 (1863), appears to be merely a list name (as is also *Nepa minor*, Walk.), and I am not aware of any published descriptions; the same remarks probably apply to *C. lacustris* and *rivalis*, Stephens (Syst. Catal. Brit. Ins. ii. p. 354, 1829), Puton, Catal. Hém. faune paléarct. éd. 3 (1886), p. 66. nos. 54 and 55.

[Even if published, Walker's *Nepa minor* could not stand, as it is preoccupied by Palisot de Beauvois, Ins. rec. Afr. et Amér., 1803.]

Corixa cognata, D. & S. (Ent. Month. Mag. vi. p. 246, 1870), is preoccupied by Fieber (Europ. Hem. p. 99, 1861) [whose species equals *carinata*, C. R. Sahlberg], and therefore requires a new name. It seems to be a bug of exceedingly limited range, and restricted to Scotland; and as the researches of Thomson, Wallengren, the Sahlbergs, and Reuter have not revealed its presence in Northern Europe, I have no hesitation in proposing the name

4. "*caledonica*."

Fam. **Notonectidæ**.

5. *Notonecta Montandoni*, sp. n.

N. triguttata, Motschulsky, affinis, convexa; capitis vertice quam basi duplo latiore; oculorum marginibus lateralibus interioribus magis rectis quam apud *triguttatam*; pronoto anteriore subconstricto; tibiarum intermediarum calcaribus minuto; hemielytris punctatis.

Allied to *N. triguttata*, Motschulsky, and *chinensis*, Fallou (to the former in structure, to the latter in appearance and, in a less degree, structure), but larger and more robust anteriorly; *head* much broader and shorter; *vertex* a trifle more than twice as wide as the narrowest part of the head (near the base).

Head and *pronotum* sordid testaceous; *eyes* crimson; *pronotum* finely but deeply punctate posteriorly, superficially rugose anteriorly; *scutellum* black; *hemielytra* punctate, with sparse pale pubescence; dark crimson-lake, irregularly marked with black; as a rule the membrane is entirely, or almost entirely, black; in some specimens there are scarcely any spots at all on the clavus and corium, in others a broad undulatory band runs across the corium; embolium either entirely concolorous with the ground-colour of the hemielytra or blotched with black.

Pedes fusco-testaceous; intermediate tibial spur very small.

Ventral surface entirely black, except the connexivum, which is sordid testaceous, the junctures of the segments narrowly black.

Long. 16–16.7 millim.; lat. pronot. 6 millim.

Ngan Hoi, Ho-Chan (China): Montandon's collection and mine (kindly presented by Prof. Montandon). N. China: British Museum.

The species of the family Notonectidæ are exceedingly difficult to diagnose satisfactorily separately; the structural characters are very obscure and not always constant; moreover, such characters as the punctuation of the head and pronotum (which, in conjunction with others, are used so extensively in other families of the Rhynchota) appear to be quite valueless here. The coloration of the hemielytra as a diagnostic character is here not only valueless, but even misleading. Almost the only satisfactory method left is the comparative, and that ceases to be satisfactory when one does not possess the other species necessary for comparison!

Montandoni is structurally very close to both *triguttata* and *chinensis*; the hemielytra of the two latter, however, appear to be somewhat laterally sinuate and slightly dilated at the lateral margins of the corium, about one third of its length from its own apex; there is not the slightest trace of this in *Montandoni*.

In *chinensis* the head is very much narrower towards the base; from the base the lateral interior margins of the eyes keep almost parallel for a little space, then diverge (but not much); the vertex in this species is more than three times as wide as the narrowest part of the head (close to the base); in *triguttata* the head is wider basally than in *chinensis* and is not so widely divergent, the above-mentioned margins of the eyes are sensibly curved, and the vertex is a trifle more than two and a half times as wide as the narrowest part of the head; in *Montandoni* the head is wider both at the vertex and base, and the interior margins of the eyes are much straighter.

From the above notes it may perhaps appear that *Montandoni* is intermediate between *triguttata* and *chinensis*; but, from an exhaustive examination of a number of specimens of all three species, I am convinced that such is not the case; although *Montandoni* and *chinensis* are so similar in colour, it is rather *triguttata* that is the intermediate species.

I have much pleasure in dedicating this large and handsome species to my learned colleague Professor Montandon, who has helped in such a great degree, from his wide experience and extensive labours, to increase our knowledge of

the neglected aquatic Rhynchota. I am also indebted to Dr. Bergroth for kindly lending me the type of *N. chinensis*.

6. *Notonecta lactitans*, sp. n.

Gracilis, capitis vertice quam basi circiter quarto latiore, oculorum marginibus lateralibus interioribus fere parallelis; pronoto fere duplo latiore quam longiore.

Long and narrow; *vertex* about a fourth wider than the base of the head, interior lateral margins of the eyes almost parallel; *head* longitudinally subcarinate at the base; head and prothorax sordid testaceous; *pronotum* not quite twice as wide as long, punctate posteriorly, rugulose anteriorly; *eyes* brown. *Scutellum* black. *Metanotum* and *dorsal aspect of abdomen* shining black; genital segments blackish fuscous, margined with green. *Hemelytra* present a zebra-like appearance; *clavus* yellowish brown; *corium* yellowish brown, with a broad dark brown band along the base; membrane basally dark brown, apically yellowish brown; the exterior margin of the hemelytra is very narrowly pale.

Pedes apparently destitute of bristles, dark testaceous. *Venter* black.

Connexivum greenish.

In the specimen from Gaboon the left interior lobe is translucent, sordid white, and the scutellar and sutural margin of the *clavus* narrowly blackish brown.

Long. 12-12.5 millim.; lat. pronot. 4-3.4 millim.

Guinea: my collection. Gaboon: coll. Signoret, Hofmuseum in Wien). Africa (*Burchell*): British Museum.

The specimens in the British Museum are labelled "*lactitans*, Burchell." I have searched through the whole of the two vols. of Burchell's 'Travels' and through his other works, and can find no trace of any such name; I have therefore treated it as MS., but have used the name to prevent possible future confusion.

This species has no very close affinities with any other *Notonecta*; its long and slender form will at once distinguish it, aided by its curious zebra-colour; the structure of the head will place it in the neighbourhood of the American *N. insulata*, W. Kirby.

7. *Notonecta Uhleri*, sp. n.

Gracilis, angusta; capite parvo; oculis magnis, prominentibus, fere contiguus basin versus, marginibus lateralibus interioribus curvatis, late divergentibus verticem versus, capitis vertice 6-8plo latiore quam basi.

Somewhat of the size and form of *N. americana*, Fabr.,

but flatter and not so robust, narrower at the base of the hemielytra, the eyes much larger and more prominent, and the head smaller.

Eyes almost contiguous at their postero-interior angles, their interior lateral margins very curved, widely diverging towards the vertex, where the head is from six to eight times as wide as between the postero-interior ocular angles. *Head* and *pronotum* smooth, shining, pale rufo-testaceous; *eyes* reddish chestnut, irregularly bordered with black. *Antennæ*: two basal segments madder-brown, two apical segments rufo-testaceous.

Pronotum anteriorly somewhat rugose, with superficial spherical depressions, posteriorly very finely punctate; humeral angles acute, accentuated; lateral margins sinuate, curved posteriorly below the humeral angles, forming almost a continuous line with the lateral margins of the scutellum; lateral margins distinctly and widely flattened anteriorly, the whole posterior half of the pronotum being elevated; posterior margin not sinuate.

Scutellum black, not pubescent; lateral margins very sinuate.

Connexivum (1) rufo-testaceous, each segment narrowly black at the apex, or (2) entirely green.

Hemielytra dark brick-red (or rich orange-yellow), with short, sparse, golden-yellow pubescence; a large irregular black blotch at the base of the corium and embolium extending transversely and non-acuminately from the apex of the clavus to the golden-yellow lateral submargin of the embolium; membrane dark red-brown, apical half black, this tint encroaching more or less upon the basal half.

Pedes rufo-testaceous or greenish; *coxæ* blackish, posterior tarsal fringe blackish and golden pink; all the spines and spurs on the legs black; *unguiculi* black; spur on intermediate *tibiæ* blunt, subcylindrical, two or three rudimentary spurs nearer the base; *tibiæ* and *tarsi* with four or five long, black, stiff hairs inferiorly; posterior femora with a double row of short spines inferiorly; *tibiæ* with short spines superiorly and inferiorly.

Ventral surface: *frons* emerald-green, anteriorly suffused with rose; apical segment of *rostrum* black, remainder rufo-testaceous, marginally darker.

Abdomen rufo-testaceous, densely furnished with blackish-green hairs; sternal hair-tufts golden pink.

Long., ♂ 11–11.4 millim., lat. 3.5–4 millim.

Long., ♀ 12 millim., lat. 4 millim.

The female is larger and apparently more robust than the male, as is the case with some other species of *Notonecta*.

Massachusetts and Florida: coll. Uhler. Massachusetts: British Museum. Massachusetts: Montandon's coll.

I have great pleasure in dedicating this handsome and remarkable species to the illustrious American Rhynchotist, to whose labours for the past forty years we are indebted in such large measure for our knowledge of, amongst other things, the North-American aquatic Rhynchota.

N. Uhleri is at once distinguished by the very peculiar form of the head and eyes, as above described; it is doubtless not uncommon over a large area of the United States.

N.B.—In connexion with the above descriptions it may be as well to remark that, contrary, perhaps, to the usage of some entomologists, I have used the word "transverse" in the sense of being *wider than long*: some rhynchotists, also, appear to use the word "*vertex*" as the equivalent of the *whole dorsal surface of the head* (excluding the eyes); I have restricted the term to the *apparent* (as seen from above) *apical margin of the head*; the head, moreover, will be found to be narrowest in most *Notonectæ* not at the base, but a trifle above it, between the postero-interior ocular angles in fact.

Summary.

Diaprepocoris, gen. nov.

D. barycephala, sp. n. Australia.

Corixa eurymome, sp. n. Australia.

— *australis*, Fieb. Additional description.

— *subjacens*, Walker.

— *lacustris*, Stephens.

— *rivalis*, Stephens.

Nepa minor, Walker.

Corixa caledonica, nom. nov. for *C. cognata*, D. & S. (preoccupied).

Notonecta Montandoni, sp. n. China.

— *lactitans*, sp. n. West Central Africa.

— *Uhleri*, sp. n. North America.

VII.—New Cyclostomatous Bryozoa found at Madeira.

By JAMES YATE JOHNSON, Corr.M.Z.S.

Tubuliporidæ.

Alecto simplex, J. Y. Johnson.

A very slender adnate thread, from the upperside of which rise the erect elongate cells in a single series. The adnate